

IN THE CLAIMS:

Claims 1 through 19 are currently pending in the above-identified application. Please amend Claims 1 through 4 and 6 through 12, and please add new Claims 13 through 19, as follows:

1. (Currently Amended) An apparatus for detecting chemical substances, comprising: an ion source ionizing a sample, an analysis region measuring an ion species of said sample, and a data processor determining the presence or ~~[[of]]~~ absence of a target chemical substance to be detected in said sample based on the analysis result of said ion species, wherein said data processor determines the detection or non-detection of an adduct ion ~~generated by reaction~~ of a molecule of said target chemical substance with a molecule of an organic acid or an organic acid salt having a mass number of 40 to 400.
2. (Currently Amended) The apparatus for detecting chemical substances according to Claim 1, wherein said organic acid or said organic acid salt is an organic acid or an organic acid salt having a hydroxyl group or a carboxyl group, ~~or a lactic acid or a lactate.~~
3. (Currently Amended) The apparatus for detecting chemical substances according to claim 1, wherein said data processor determines the detection or non-detection of said generated ion, or the detection or non-detection of an adduct ion ~~generated by reaction~~ of a molecule generated from said organic acid or said organic acid salt with a molecule of said target chemical substance to determine the presence or absence of said target chemical substance.
4. (Currently Amended) The apparatus for detecting chemical substances according to Claim 1, wherein said data processor determines one or more of the detection or non-detection of an ion generated from said target chemical substance, the detection or non-detection of said generated ion, and the detection or non-detection of an adduct ion ~~generated by reaction~~ of a molecule generated from said organic acid or said organic acid salt with a molecule of said target chemical substance to determine the presence or absence of said target chemical substance.

5. (Original) The apparatus for detecting chemical substances according to Claim 1, wherein tandem mass analysis is performed on said generated ion, and said data processor determines the detection or non-detection of a fragment ion of said generated ion to determine the presence or absence of said target chemical substance.
6. (Currently Amended) The apparatus for detecting chemical substances according to Claim 1, wherein tandem mass analysis is performed on an adduct ion generated by reaction of a molecule generated from said organic acid or said organic acid salt with a molecule of said target chemical substance, and said data processor determines the detection or non-detection of a fragment ion of said generated ion to determine the presence or absence of said target chemical substance.
7. (Currently Amended) The apparatus for detecting chemical substances according to Claim 1, wherein tandem mass analysis is performed simultaneously on one or more of an ion generated from said target chemical substance, said generated ion, and an adduct ion generated by reaction of a molecule generated from said organic acid or said organic acid salt with a molecule of said target chemical substance, and said data processor determines the detection or non-detection of a fragment ion of an ion generated from said target chemical substance and the detection or non-detection of a fragment ion of said generated ion to determine the presence or absence of said target chemical substance.
8. (Currently Amended) An apparatus for detecting chemical substances, comprising: a heating unit for generating a sample gas, a gas generator for generating a gas of an organic acid or an organic acid salt having a mass number of 40 to 400, a gas mixer for mixing the gas of said organic acid or said organic acid salt with said sample gas generated by said heating unit to generate a mixed gas, a mass analysis region for obtaining a mass spectrum of an ion of said mixed gas, and a data processor for determining the presence or absence of a target chemical substance to be detected in said sample based on said mass spectrum, wherein said data processor determines the detection or non-detection of an adduct ion generated by reaction of a molecule of said

target chemical substance with a molecule of said organic acid or said organic acid salt to determine the presence or absence of said target chemical substance.

9. (Currently Amended) An apparatus for detecting chemical substances, comprising: an introduction region for introducing a sample gas, a gas generator for generating a gas of an organic acid or an organic acid salt having a mass number of 40 to 400, a gas mixer for mixing the gas of said organic acid or said organic acid salt with said sample gas introduced by said introduction region to generate a mixed gas, a mass analysis region for obtaining a mass spectrum of an ion of said mixed gas, and a data processor for determining the presence or absence of a target chemical substance to be detected in said sample gas based on said mass spectrum, wherein said data processor determines the detection or non-detection of an adduct ion ~~generated by reaction~~ of a molecule of said target chemical substance with a molecule of said organic acid or said organic acid salt to determine the presence or absence of said target chemical substance.
10. (Currently Amended) An apparatus for detecting chemical substances, comprising: wipe materials containing ~~dipped with~~ an organic acid or an organic acid salt having a mass number of 40 to 400 to extract a sample from a detection target, a heating unit for heating the wipe materials to generate a mixed gas obtained by mixing a gas of said organic acid or said organic acid salt with a gas of said sample, a mass analysis region for obtaining a mass spectrum of an ion of said mixed gas, and a data processor for determining the presence or absence of a target chemical substance to be detected in said sample based on said mass spectrum, wherein said data processor determines the detection or non-detection of an adduct ion ~~generated by reaction~~ of a molecule of said target chemical substance with a molecule of said organic acid or said organic acid salt to determine the presence or absence of said target chemical substance.
11. (Currently Amended) A method for detecting chemical substances, comprising the steps of: ionizing a sample, analyzing an ion species of said sample, and determining the detection or non-detection of an adduct ion ~~generated by reaction~~ of a molecule of said target chemical substance with a molecule of an organic acid or an organic acid

salt having a mass number of 40 to 400 based on the analysis result of said ion species to determine the presence or absence of said target chemical substance.

12. (Currently Amended) A method for detecting chemical substances, comprising the steps of: generating a sample gas, mixing a gas of an organic acid or an organic acid salt having a mass number of 40 to 400 with said sample gas to generate a mixed gas, ionizing said mixed gas, obtaining a mass spectrum of an ion of said mixed gas, and determining the detection or non-detection of an adduct ion generated by reaction of a molecule of said target chemical substance with a molecule of said organic acid or said organic acid salt to determine the presence or absence of said target chemical substance.
13. (New) The apparatus for detecting chemical substances according to claim 1, wherein said organic acid or said organic acid salt is a lactic acid or a lactate.
14. (New) The apparatus for detecting chemical substances according to claim 10, wherein said organic acid or organic acid salt is at least one of a lactic acid, a lactate, and succinic acid.
15. (New) The apparatus for detecting chemical substances according to claim 10, wherein said data processor determines the detection or non-detection of at least one of an adduct ion of a molecule of said target chemical substance with a molecule of a lactic acid, lactate, or succinic acid, hydrogen desorbed of said adduct ion, hydrogen added of said adduct ion, and fragment ion of said adduct ion.
16. (New) An apparatus for detecting chemical substances, comprising: wipe materials to extract a sample from a detection target, a heating unit for heating the wipe materials, a sample introduction unit for introducing gas from said heated wipe materials by said heating unit, an ion source for ionizing said gas introduced from said sample introduction unit, a mass analysis region for obtaining a mass spectrum of ion ionized by said ion source, a data processor for determining the presence or absence of a target chemical substance to be detected in said sample based on said mass spectrum, wherein said data processor determines the detection or non-detection of an adduct

ion of a molecule of said target chemical substance with a organic molecule contained in said gas generated from said heated wipe materials.

17. (New) An apparatus for detecting chemical substances, comprising: an ion source ionizing a sample, an analysis region measuring an ion species of said sample, and a data processor determining the presence of absence of a target chemical substance to be detected in said sample based on the analysis result of said ion species, wherein said data processor determines the detection or non-detection of an adduct ion of a molecule of said target chemical substance with an organic molecule.
18. (New) The apparatus for detecting chemical substances according to claim 17, wherein said organic molecule is at least one of a lactic acid, lactate, and succinic acid.
19. (New) A method for detecting chemical substances, comprising the steps of: ionizing a sample, analyzing an ion species of said sample, and determining the detection or non-detection of an adduct ion of a molecule of said target chemical substance with an organic molecule based on the analysis result of said ion species to determine the presence or absence of said target chemical substance, and alarming based on said detection of said target chemical substance or said adduct ion.